

Figure 1

scFv m6 fragment (SEQ ID NO:1)

VLTQSPGTL SLSAGERATL SCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGGS
GGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCASGGTFSMYGVNWVRQAPGH
GLEWMGGIIPFGTSNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGT LTVSS

scFv m9 fragment (SEQ ID NO:2)

VLTQSPGTL SLSAGERATL SCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGGS
GGGGSGGGGSVQLLEQSGAEVKKPGSSVQVSCAFGGTFSMYGFNWVRQAPGH
GLEWMGGIIPFGTTNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCAR
DFGPDWEGGDSYDGSGRGFFDFWGQGT LNVSS

Flexible linker 1 (of m6Fc1, m9Fc1 m12Fc1, m14Fc1, m16Fc1, m18Fc1) (SEQ ID NO:3)

PDPEEPKSCDKTHTCPPCP

Flexible linker 2 (of m6Fc2 and m9Fc2) (SEQ ID NO:4)
EPKSCDKTHTCPPCPPDPEEPKSCDKTHTCPPCP

IgG1 Fc region (CH2-CH3) (SEQ ID NO:5)

APELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH
NAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA
KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT
PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m6Fc1 Amino Acid Sequence (SEQ ID NO:6)

VLTQSPGTL SLSAGERATL SCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGGS
GGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCASGGTFSMYGVNWVRQAPGH
GLEWMGGIIPFGTSNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGT LTVSSPDPEEPKSCDKTHTCPPCPAPE
LLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAK
TKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQP
REPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPPVL
DSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m6Fc2 Amino Acid Sequence (SEQ ID NO:7)

VLTQSPGTL SLSAGERATL SCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGGS
SGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCASGGTFSMYGVNWVRQAPGH
GLEWMGGIIPFGTSNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGT LTVSSPEPKSCDKTHTCPPCPPDPEEPK
SCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF

NWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYSKLTVDKSRWQQGNVFSVCSVMHEALHNHYTQKSLSLSPG

m9Fc1 Amino Acid Sequence (SEQ ID NO:8)

VLTQSPGTLTSLASGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGSGGGGSGGGGSGVQLLEQSGAEVKKPGSSVQVSCKAFFGGTFSMYGFNWVRQAPGHGLEWMGGIIPFGTTNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCARDFGPDWEGGDSYDGSGRGFFDFWGQGTLLNVSSPDPEEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYSKLTVDKSRWQQGNVFSVCSVMHEALHNHYTQKSLSLSPG

m9Fc2 Amino Acid Sequence (SEQ ID NO:9)

VLTQSPGTLTSLASGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTIGQGTKLEIKRTGGGSGGGGSGGGGSGVQLLEQSGAEVKKPGSSVQVSKASGGTFSMYGFNWVRQAPGHGLEWMGGIIPFGTTNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCARDFGPDWEGGDSYDGSGRGFFDFWGQGTLLNVSSPEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYSKLTVDKSRWQQGNVFSVCSVMHEALHNHYTQKSLSLSPG

scFv X5 fragment (SEQ ID NO:10)

VLTQSPGTLTSLASGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATGIPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGTKLEIKRTGGGSGGGGSGGGGSGVQLLEQSGAEVKKPGSSVQVSKASGGTFSMYGFNWVRQAPGHGLEWMGGIIPFGTSNYAQKFRGRVTFTADQATSTAYMELTNLRSDDTAVYYCARDFGPDWEDGDSYDGSGRGFFDFWGQGTLLTVSS

scFv m12 fragment (SEQ ID NO:11)

TLTQSPPTLSASPGERVILSCRASQSVSSSHLAWYQQRPGQTPRLLIYSSSSRAAGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQNGGFSRFFFGPGTTVDMKRGGGGSGGGGSGGGGSGVQLLESGLPKPSQSLTCAISGDSLSDDSTAWNWRQSPSRGLEWLGRTYYRSTWFDYAESVKSRLINPDTSKSQFSLQLRSVTPEDTAVYYCARDFNKGAGYNWFDPWGPVTVSS

scFv m14 fragment (SEQ ID NO:12)

ELTQSPGTLTSLSPGERATLSCRAHSVSRAYLAWYQQKPGQAPRLLIYGTSSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGGSPWFGQGTKVELKRGGGGSGGGGSGGGGSGVQLLESGLPKPSQSLTCTVSGGSISTGDYYWSWRQSPGKGLIEWIGYISSSGNTYYNPSLTSRVVISFDTSMNQFSLKVDVTAADTAVYYCARERRVLLWLGFRGGLDYWGQGTLLTVSS

scFv m16 fragment (SEQ ID NO:13)

MTQSPSSVSASVGDRVITICRASQGISSWLAWYQQKPGKAPKLLINAASSLQSGV
PSRFGSGSGTDFTLTISLQPEDFATYYCQQANSFPLTFGGGTKEIKRGGGGSGG
GGSGGGGGSVQLLES GA EVKRP GSSVRVSCQVSGGSFSNYAVSWVRQTPGHGLEW
MGGIIPMFNAPNYAQKFHGRVTFIADSTRTVHME LRSLRSED TAVYFCATASEA
TENDYYQSPTHYYAMDVWGQGTAVTVFSS

scFv m18 fragment (SEQ ID NO:14)

QMTQSPSFLSASVGDRVSITCRASQDIQKFLAWYQLTPGDAPKLLMYSASTLQSG
VPSRFGSGSGTEFTLTISGLQPEDFATYYCQHLKRYPTFGQGTKEISRGGGGSG
GGSGGGGGSVQLLES GPVVKPSETLSLTCTVSGASVNNYYWTWVRQPPGKGLE
WIGNVYDSGDTNYPNPSLSSRLSMDTSKNQFSLRLSSVTAADTATYYCARYHRH
FIRGPLSFDYWGRGTLVTVSS

m12Fc1 Amino Acid Sequence (SEQ ID NO:15)

TLTQSPPTLSASPGERVILSCRASQSVSSHLAWYQQRPGQTPRLLIYSSSSRAAGIP
DRFGSGSGTDFTLTISRLEPEDFAVYYCQNGFSPRFFFGPGTTVDMKRGGGGSG
GGSGGGGGSVQLLES GPGLVKPSQSLSLTCAISGDSLSSDSTAWNWRQSPSRGLE
WLGRTYRSTWFDYAESVKSRIINPDTSKSQFSLQLRSVTPEDTAVYYCARDF
NKGAGYNWFDPWGPGTVTVSSPDPEEPKSCDKTHTCPPCPAPELLGGPSVFLFP
PKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNS
TYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP
SRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSK
LTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m14Fc1 Amino Acid Sequence (SEQ ID NO:16)

ELTQSPGTLSPGERATLSCRASHSVSRAYLAWYQQKPGQAPRLLIYGTSSRATG
IPDRFGSGSGTDFTLTISRLEPEDFAVYYCQQYGGSPWFGQGTKEIKRGGGGSG
GGSGGGGGSVQLLES GPGLVKPSQTLSLTCTVSGGSISTGDYYWSWIRQSPGKGL
EWIGYISSSGNTYYNPSLTSRVVISFDTSMNQFSLKVDSTAAADTAVYYCARERRV
LLWLGFPRGGLDYWGQGTTLTVSSPDPEEPKSCDKTHTCPPCPAPELLGGPSVFLF
PPPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYN
STYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPP
SRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYS
KLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m16Fc1 Amino Acid Sequence (SEQ ID NO:17)

MTQSPSSVSASVGDRVITICRASQGISSWLAWYQQKPGKAPKLLINAASSLQSGV
PSRFGSGSGTDFTLTISLQPEDFATYYCQQANSFPLTFGGGTKEIKRGGGGSGG
GGSGGGGGSVQLLES GA EVKRP GSSVRVSCQVSGGSFSNYAVSWVRQTPGHGLEW
MGGIIPMFNAPNYAQKFHGRVTFIADSTRTVHME LRSLRSED TAVYFCATASEA
TENDYYQSPTHYYAMDVWGQGTAVTVFSSPDPEEPKSCDKTHTCPPCPAPELLG
GPSVFLFPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKP
REEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREP
QVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSD
GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

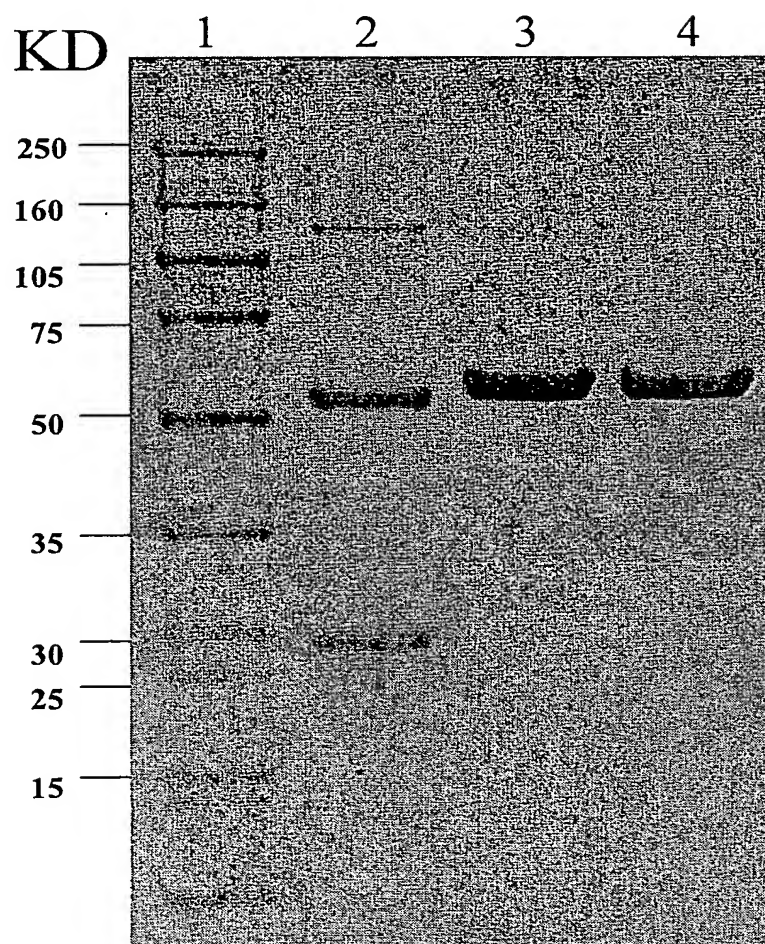
m18Fc1 Amino Acid Sequence (SEQ ID NO:18)

QMTQSPSFLSASVGDRVSITCRASQDIQKFLAWYQLTPGDAPKLLMYSASTLQSG
VPSRFGSGSGSGTEFTLTISGLQPEDFATYYCQHLKRYPTYTFGQGTKLEISRGGGGSG
GGGSGGGGGSVQLLES GPGVVKPSETLSLTCTVSGASVNYYWTWVRQPPGKGLE
WIGNVYDSGDTNYPNPSLSSRLSLSMDTSKNQFSLRLSSVTAADTATYYCARYHRH
FIRGPLSFDYWGRGTLVTVSSPDPEEPKSCDKTHTCPPCPAPELLGGPSVFLFPPKP
KDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYR
VVSVELTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRD
ELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPG

Optional Leader Sequence (SEQ ID NO:19)

MPMGSLQPLATLYLLGMLVASVLA

Figure 2



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